

Darwin Valley Groundwater Basin

- Groundwater Basin Number: 6-57
- County: Inyo
- Surface Area: 44,200 acres (69 square miles)

Basin Boundaries and Hydrology

Darwin Valley Groundwater Basin underlies a north-trending alluvial valley in southeast Inyo County. Elevation of the valley floor ranges from 3,500 feet above mean sea level in the northwest, to about 5,800 feet in the south. The basin is bounded by nonwater-bearing consolidated rocks of the Ophir Mountain on the north, the Argus Range on the east and southeast, and the Coso Range on the west and southwest (Jennings 1958; DWR 1964).

The northern two-thirds of Darwin Valley is drained by Darwin Wash, which flows north to the end of the valley and northeast into Panamint Valley. The southern one-third of the valley drains south to Carricut (dry) Lake and thereafter southeasterly through Water Canyon to Panamint Valley. Annual rainfall ranges from 6 to 10 inches.

Hydrogeologic Information

Water Bearing Formations

Quaternary alluvium forms the principal water-bearing unit within the basin. This unit includes unconsolidated younger alluvial deposits and underlying unconsolidated to poorly consolidated older alluvial deposits. Thickness of the alluvial fill is at least 250 feet (DWR 1964).

Recharge and Discharge Areas

Recharge to the basin is primarily from the percolation of runoff from the Argus and Coso Ranges. Other sources of recharge include subsurface inflow and the infiltration of rain that falls on the valley floor. Percolation through alluvial fan deposits at the base of the Argus and Coso ranges, provide the principal recharge to the basin. Groundwater beneath Darwin Wash moves north and discharges to Panamint Valley. Groundwater in the southern portion of the basin moves southeast and discharges to Panamint Valley through Water Canyon (DWR 1964).

Groundwater Level Trends

Water levels taken at two wells in the mid 1950s were 15 and 19 feet below ground surface.

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity is estimated at about 400,000 af (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (C)

Groundwater budget information is not available.

Groundwater Quality

Characterization. Groundwater obtained from wells drawing from the younger alluvium in the vicinity of Darwin Wash is suitable for most domestic and irrigation purposes. Chemical analysis of the water indicates a TDS content of about 350 mg/L and a calcium-sodium bicarbonate-sulfate character. Groundwater in the older alluvium has TDS content ranging near 750 mg/L and is sodium-calcium sulfate-bicarbonate in character (DWR 1964).

Impairments. Groundwater analyzed from wells perforated in the older alluvium is marginally impaired due to high boron and sulfate content (DWR 1964).

Well Production characteristics

Well yields (gal/min)		
Domestic/Mining	Range to 130	Average: 43 (DWR 1975)
Total depths (ft)		
Domestic/Mining	Range 100 – 300 (DWR 1975)	
Municipal/Irrigation		

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
	Groundwater levels	
	Miscellaneous water quality	
Department of Health Services and cooperators	Title 22 water quality	

Basin Management

Groundwater management:

Water agencies

Public

Private

References Cited

- California Department of Water Resources (DWR). 1964. *Ground Water Occurrence and Quality Lahontan Region*. Bulletin No. 106-1. 439 p.
- _____. 1969. *Water Wells and Springs in Panamint, Searles, and Knob Valleys*. Bulletin No. 91-17. 110 p.
- _____. 1975. *California's Ground Water*. Bulletin No. 118. 135 p.
- Jennings, C.W. ed. 1958. *Geologic Map of California: Death Valley Sheet*. Olaf P. Jenkins Edition California Department of Conservation, Division of Mines and Geology. Scale 1: 250,000.

Errata

Substantive changes made to the basin description will be noted here.